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The New Zealand Census:
Some Technical and Historical Aspects

*A thesis presented in partial fulfilment of the requirements for the degree of
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Abstract

This thesis provides an overview of the New Zealand Census of Population and Dwellings. Certain critical aspects are examined in detail, including the collection phase involving questionnaire content and the enumeration process, the testing before and after, the preparation of the data for entry into a computer and the subsequent dissemination of the information. The information for this research was obtained from published material from overseas, from published and unpublished material from the New Zealand Department of Statistics and from interviews with some officers of the Department.

In each aspect, New Zealand is compared and contrasted with other major countries; specifically America, Australia and India. Because of its geographical proximity, any developments in Australia have an immediate impact on New Zealand. The US Bureau of the Census is often a forerunner in the development of census procedures and techniques. The procedures developed in India to cope with their own specific and peculiar problems in census-taking provide an interesting comparison with those of New Zealand. Where pertinent, aspects of censuses in other countries are also compared with those of New Zealand censuses.

New Zealand has adopted many of the procedures used in other countries, but limited resources have hindered or prevented census staff from developing and maintaining some of the procedures used in American and Canadian censuses. In particular, pilot testing of questionnaires has only recently been incorporated into the census procedures, and major post-censal evaluations are not conducted. On the other hand, the small size of the New Zealand population has facilitated innovations in such areas as data entry, editing and imputation.

The history of census-taking is covered to gain a perspective on the place of the census in modern society. Alternatives to

censuses were examined; specifically, regular major surveys, administrative records and data banks. It is found that surveys suffer a lower response rate than censuses and that the problems of differential undercoverage of various population groups experienced in censuses are exacerbated in surveys. Administrative records frequently do not contain sufficient detail, varying definitions are employed to categorise the data and the quality of the data cannot always be assured. Data banks provide a rapidly growing source of information, but currently also suffer from a lack of universal definitions, and many data banks do not incorporate strict quality control procedures as a matter of course. Moreover, strict confidentiality laws currently prevent access by census staff to administrative files and data banks.

It could be argued that censuses should continue to be taken because of the need to obtain current, detailed information on all members of any population for planning for present and future needs of that society. A census is the only vehicle for collecting information supplied by all members of the population at a single point in time.

If censuses are to remain credible and acceptable to the individual members of a population, challenges must continue to be addressed such as: the accuracy of estimates must be protected by obtaining the highest possible response rate from all sections of the population; confidentiality of data must be guaranteed; the costs of the census operation must be kept within budget, while still maintaining high data quality and publication of data in a time frame that is acceptable to users of census data; universal definitions must be employed to minimise the redundancy between censuses, surveys and administrative lists; results of the census must be attractively presented to the public using a variety of media and accompanying analysis reports must be aimed at increasing the public awareness and of the importance and need for regular, successful censuses.

Preface

As nations grow, their composition and needs change. Young nations are typically small, with most of the population concentrated in rural areas and employed in agricultural activities. Usually, as the size of the total population increases, more and more people are attracted towards the towns and cities. This is known as "urban drift", and a trend towards non-agricultural employment marks significant social and economic changes in the structure of the population. Some towns and cities will grow at a faster rate than others, and will place varying demands on the social and financial resources of the country.

In addition to the geographic distribution of the population, the racial and the age distribution will also determine current and future needs. Different races have different social structures and these will affect their requirements for housing and education. For example, some races have "extended family" social structures, and will not place as severe a demand on housing as races which favour the "nuclear family" structure. In recent times, the trend in increasing family dissolution has resulted in increased pressure on existing housing resources.

Races within a nation frequently experience differing infant mortality rates, differing life expectancies, and varying susceptibility of races to infections and diseases. Knowledge of the racial components of the population will assist in planning for the health needs, on both a national and regional basis. Changes in fertility patterns will gradually alter the age structure of the population. A general decrease in the average number of children in each family will result in a gradual reduction of the number of persons entering the workforce, whereas a "baby boom" will place an increased demand on the educational resources in the near future. If the baby boom is followed by a gradual trend towards smaller

families, a "bulge" in the age structure of the population will be experienced, resulting in changing demands on the society as children of the baby boom era enter and leave school, then enter and leave the workforce. The age structure of the workforce is of particular importance, as this sector of the population must contribute to the national financial resources, to cater for the needs of the young and the elderly.

From the point of view of those who must plan and administer, a reliable source of information on all features of the population is essential in order to provide for the present and future needs of a nation. Such information needs to be as up-to-date as possible. A census is currently the only vehicle for the gathering of a detailed "snapshot image" of the total population. Surveys do not attempt to obtain complete coverage of the population, while administrative lists are seldom sufficiently detailed and often do not contain current information. Data bases may contain up-to-date information, but data on migrations within a country can only be obtained through keeping records such as all the financial transactions of each individual. Because of the problems of confidentiality, there is still some resistance to the prospect of data bases being utilised in such a manner.

The Encyclopaedia Britannica Micropaedia defines a census to be the enumeration of people, and also of houses, businesses, or other important items in a country or region at a particular time. Used alone, the term usually refers to a population census. The 11th Edition of the Encyclopaedia Britannica defines it as a term used to denote a periodical enumeration restricted, in modern times, to population, and occasionally to industries and industrial resources, but formerly extending to property of all kinds, for the purpose of assessment. The word is taken from Latin *censere*, to estimate or assess; connected by some with *centum*, i.e. a count by hundreds.

Early censuses were chiefly taken to assess the amount of tax to be paid by citizens, or to count the number of men eligible

for military service. In addition to enumerating the population, modern censuses are used to obtain information necessary to analyse social conditions and to assess the effectiveness of government policies.

A census provides a picture of the population as at a given moment. Although some of the questions relate to the individual's past - such as birthplace, education, and number of children born - each census is better as a current record than as a historical record. Historical trends are properly revealed only by a succession of censuses. Censuses are generally taken on a regular basis every 5 or 10 years. If censuses are conducted on a 10-yearly cycle, information from these censuses is usually supplemented by intercensal surveys.

For individuals in the population, the censuses may seem an unwelcome intrusion into their privacy. However, as well as research, census data is used for such important decisions as political representation, allocation of government funds, planning for educational facilities, housing needs, health facilities, and the siting of industrial plants. An accurate description of the population would require the enumeration of every member of the population, with all the questionnaires being completed without omissions or inaccuracies or deliberately erroneous information. In reality, such a happy state is unobtainable. Even if total coverage were obtained (that is, every member of the population is counted), the information supplied would not always be accurate or complete.

Decision makers and planners must rely on publicity and educational campaigns to persuade the public of the necessity of regular, successful censuses. Quality control procedures must be carefully monitored to ensure that the published census data is as free from errors and omissions as possible. If a census does not achieve a good response rate, then analysis of the data will produce estimates which are not accurate, and decisions made on the basis of these estimates may result in undesirable consequences.

Because of the high mobility of persons in the 15-30 year age group, problems are frequently experienced in contacting them for enumeration. Minority population groups are also prone to higher underenumeration rates than the rest of the population, possibly because they do not understand the purpose of the census, or they have fears about the usage made of the census data. Following any census, an evaluation should be made of the coverage achieved, both for the total population and subgroups of the population, and also the quality of census data.

Pretests and pilot tests should be performed prior to a census to evaluate the questions contained in the census questionnaire and the design of the questionnaire. Field testing and dress rehearsals should be used to evaluate the enumeration procedures and the final version of the census questionnaire.

Analyses, tables and diagrams should be made available using several types of media, and their availability widely publicised. This would help to to impress on the public the value of census data. The success of any census operation depends on the cooperation of the public, and no efforts must be spared in educating everyone about the value and necessity of regular, successful censuses.

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Chapter 1

HISTORICAL OVERVIEW OF CENSUS TAKING

Introduction

A census is a collection of information from every element of a population. The history of the population census dates back some three thousand years or so, but it was only in the last few hundred years that censuses were carried out at regular intervals and that extensive information was collected on each individual.

The term census stirs up strong feelings. This may seem strange, as it would appear to many of us to be a dry counting of the population, essential to the successful management of a nation.

Reasons for the reluctance of people to be counted are not difficult to imagine, for rulers usually instigated the census as a basis of taxation or conscription into the army. In more recent times, antagonism may arise as the census is seen as an unwelcome governmental infringement in their lives, particularly if they happen to be illegal immigrants or if they have overstayed their entry permits or have other reasons to fear the government of the day.

Early Censuses

Censuses have been conducted to obtain varying information from very ancient times and, looking back, we become aware of the fear and suspicion with which people viewed them. The Old Testament makes mention of the enumeration of the fighting men of Israel, males who were 20 years of age or older, and of the separate enumeration of the non-military Levites, who were

counted if they were at least 30 years old. Solomon had a similar census conducted in order to distribute the functions; this was reluctantly done by Joab at David's command (see 11 Samuel, Chapter 24). The antagonism of a section, at least, of the population against this enumeration is suggested by the comment that "God was angry with David" for this act. Apparently, a register of the population of each clan was kept during the Babylonian captivity, and the totals were published on the return to Jerusalem.

In the Persian Empire, some method was used to determine the resources of each province in order to fix the tribute, or taxation. In China, enumeration was an ancient institution in connection with provincial revenues and military liabilities. In Egypt, Amassis had each individual's occupation registered annually in order to aid official supervision of morals by discouraging disreputable occupations. In Greece, according to Herodotus, Solon introduced the annual registration of occupations into the Athenian administration scheme, and this later developed into an electoral record.

Roman Censuses

Rome first established the regular system from which the name of the enquiry, census, is derived. The original Roman census is attributed to Servius Tullius, who is said to have decreed that the population be enumerated every fifth year, along with the property of each family including land, livestock, slaves and freedmen. In those days, Roman society was rigidly structured into 6 main classes, ranging from patricians (noblemen) to plebians (commoners). Slaves occupied a place below all of these classes. The main object of the census was to ensure the accurate division of people into these classes and their respective centuries, based on considerations of combined numbers and wealth.

The word census comes from Latin, from the same stem as censor, which has strong moral implications. This seems very strange at first sight and, indeed, the link between morality and data collection is interesting: Enumeration of the people was only one of a group of many functions which were performed by the two magistrates of the highest importance in the Roman republic, called Censors. The Censors' duty was to take census of the citizens of Rome, to estimate their property, to accordingly impose taxes, and to punish offences. The Censor's responsibility included maintaining the standards of morality and the conventional requirements of Roman custom; bad cultivation of land, disreputable occupations, luxuriousness and celibacy were punishable offences. Any citizen who neglected his registration for the census risked high penal consequences.

The functions of the Censors were especially directed to the objects of public revenue, and apparently the enumeration of the people was not deemed of value as a source of statistical knowledge which might influence morals or legislation. This may be why so little is known today about statistical considerations, or questions, about the population and extent of the city of Rome itself in those times.

The census, being so important, was conducted every 5 years, and was followed by a religious sacrifice of purification or lustration, offered on behalf of the people by the censors or functionaries in charge of the classification. The term lustrum is now taken to mean a period of 5 years. The word census came to mean the property qualification of class as well as the process of registering the individual. It was later used in the sense of taxation, in which it has survived in the contracted form of cess, which is defined in the Oxford Dictionary as tax, levy or rate.

In the time of Augustus, 5 BC, the census was extended to the whole empire. According to the Gospel of St Luke, Augustus "ordered the whole world to be taxed" or, according to revised versions, "to be enrolled". Unfortunately, the compilation of

this, the most comprehensive enumeration yet attempted, was never completed due, apparently, to the emperor's death.

After the collapse of Rome, the practice of census-taking was discontinued until the modern period, with few exceptions. The Domesday inquest of England in 1086 was made to acquaint William the Conqueror of the land holders and holdings of his new domain. Less comprehensive censuses were the Breviary of Charlemagne and the almost complete count of the German city of Nürnberg (Nuremburg), made in 1449, under the threat of siege. Like the Roman census, the former two inquiries took little or no account of the population at large.

The Domesday Book

The aims of Domesday were to settle disputes over tenures after the wholesale transfer of estates from English to Norman hands, to establish exactly what services the aristocracy owed the crown, and to provide an up-to-date account of potential tax revenues. The survey provoked dissent and in 1086 Robert Losinga, Bishop of Hereford, wrote that *"the land was vexed with much violence arising from the collection of the royal taxes"*.

Relatively little written documentation from the 11th century has survived, and the current knowledge of the compilation of the Domesday Book has been deduced from a mere handful of documents. The Domesday Survey was a survey of the manors, not of individuals, and it is believed that the survey was conducted by dividing the counties of England into either seven or nine circuits, which were visited by teams of commissioners. The counties and possible circuits are displayed in Figure 1.1 on page 5.

Ten questions were put to the king's tenants-in-chief or their agents, and to be answered for three time periods: in the time of King Edward (that is, before the Norman Conquest); at the

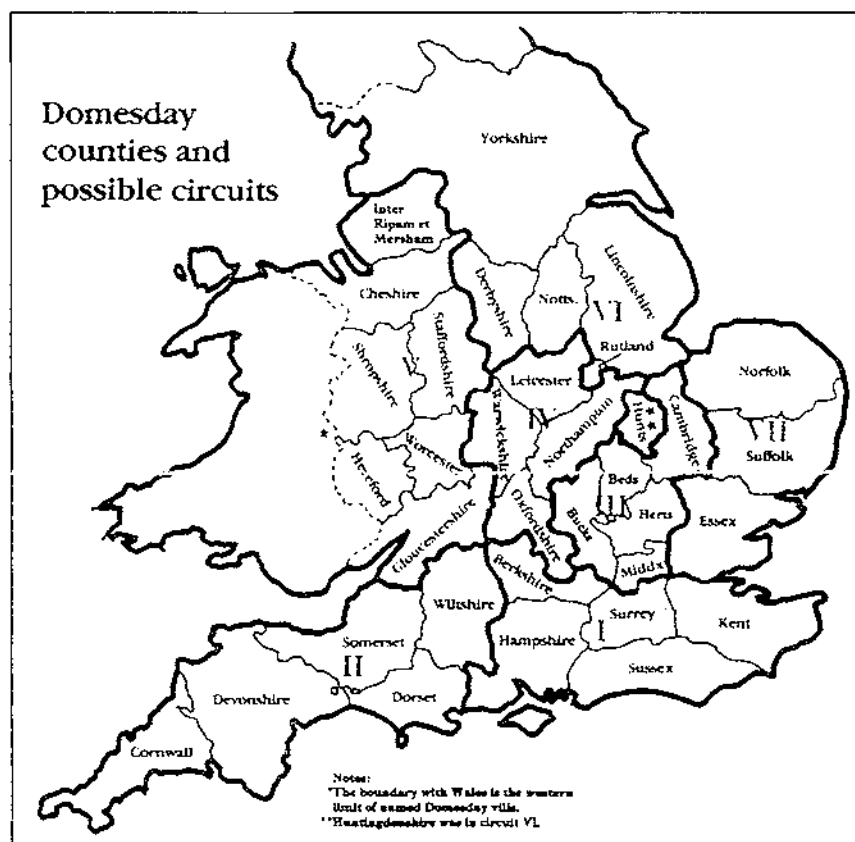


Figure 1.1 Domesday Counties and Possible Circuits

Source: *Domesday 1086-1986: an exhibition to celebrate the 900th anniversary of Domesday Book, 1986* (Public Record Office)

time when King William gave the manors (after the Conquest in 1066); and at the time of the survey(1086).

The Domesday questions were as follows:

1. *What is the name of the manor?*
2. *Who held it in the time of King Edward?*
3. *Who holds it now?*
4. *How many hides are there? (i.e. what is its assessment for the geld tax? According to the Oxford Illustrated Dictionary (1962), a hide is a medieval measure of land, of varying extent, and originally meant the amount required by one free family and its dependents, or as much as could be tilled with one plough in a year.)*
5. *How many ploughteams, in demesne (i.e. on the lord's land) and among the men (i.e. the rest of the village)?*
6. *How many villeins(feudal tenants entirely subject to lord or attached to manor)?*
How many cottars (peasants occupying cottages and labouring as required)?
How many slaves?
How many freemen (labourers who were neither slaves nor serfs [labourers not allowed to leave the land on which they worked])?
How many sokemen (persons with right of local jurisdiction)?
7. *How much wood? How much meadow? How much pasture? How many mills? How many fisheries?*
8. *How much has been added or taken away?*
9. *How much was the whole worth? How much is it worth now?*
10. *How much had or has each freeman or each sokeman?*

The final question asked, relating to the time of the survey, was

11. *And whether more can be had than is had (i.e. can the manor raise more tax revenue?)*

The answers to these questions, either written or verbal, were subjected to the scrutiny of the hundred juries in the county courts. Following the proof of the information in court, it was copied and sent to Winchester, where the information for the whole country as far north as Yorkshire, but excluding Essex,

Suffolk and Norfolk, was edited to form Great Domesday. The entries for the eastern counties were not edited but simply bound together to form Little Domesday. Unfortunately, Great Domesday is not dated, and varying opinions exist as to when it was completed. However, the information for both volumes was probably assembled by the Summer of 1096 and possibly by 1 August, when a great assembly was held at Salisbury. If this is so, then production of the book could then have started in the previous winter. The Domesday Book had probably reached its final stages by 9 September, 1087, when William died in Rouen.

It is interesting to note that it is still valid for the Domesday Book to be cited in English courts of law when questions are raised of ownership of land or of some commercial practices.

Development of the Modern Census

The modern idea of a population census as being a complete enumeration of all people and their important characteristics, such as housing, marital status and employment, slowly arose in the 17th and 18th Centuries, due to the desire to understand the basic structure and trends of society. Contrast this with the aim of the earlier censuses: identification and control of particular individuals. There is no such thing as "the first modern census", as none of the early censuses embodied all the modern features.

Census taking as we know it today has evolved from three parallel developments:

- (i) the gradual change to national enumerations for general scientific and governmental purposes;
- (ii) the improvement of administrative machinery, techniques and accuracy of enumeration, including legal safeguards to assure confidentiality; and
- (iii) the deepening and systemization of the types of information obtained.

The United Nations (1958, p.4) gave a definition of a modern population census. Six essential features of a census were listed:

1. A census must have *national sponsorship*.
2. A census must cover a *precisely defined territory*; boundary changes that affect comparisons between successive censuses should be clearly and explicitly stated.
3. *All persons* in the scope of the census must be included without duplication or omission. (If sampling is used, it must give every member of a stratum, or subgroup of the population, equal likelihood of selection.)
4. The people must be counted as of a *fixed time*. Persons born after the census date are to be excluded, and persons who die after the census date are to be included.
5. Census data must be obtained separately for *each individual*.
6. The data from a census must be *published*.

The Establishment of Regular Enumerations

The first modern effort to count everyone at successive intervals was made in La Nouvelle France, now known as Quebec, and Acadie, which now bears the name Nova Scotia, where 6 enumerations were made between 1665-1754. In Paris, domestic occurrences such as births, deaths and marriages in the locality were registered and periodically published, and in 1670 Colbert ordered the extension of the system to the rural communes. Colbert, a statesman under Louis XIV, was a remarkable man who reformed French financial administration, developed industry tariffs, virtually founded the French Navy, and founded the French Academies of Literature, Science, and the Fine Arts.

In 1749, the Swedish clergy were required to render returns of their parishioners, from which the total population of Sweden,

including Finland, was obtained. 1787 marked a similar development for Denmark.

Several Italian states conducted approximate enumerations, including Sardinia in 1773 and 1795, Parma in 1770 and Tuscany in 1766. From 1742 onwards, several German states conducted enumerations.

The British Board of Trade ordered 27 censuses in the North America colonies between 1635 and 1776. After independence in 1776, these former colonies continued to take censuses until the establishment of the United States of America. The first Federal census of the United States of America was taken in 1790. It is noteworthy both for the size of the area enumerated, for the effort made to obtain data on characteristics of the population, and for the political purpose for which it is undertaken, namely representation on the basis of the population.

The United States of America has continued to take censuses every 10 years since 1790. The first American census neglected to obtain information on occupation, birthplace, marital status and exact age. The 1800 Census included a 5-year classification of whites, and from 1850 onwards, the individual was used as a unit, rather than the family as had previously been the case.

In England in 1753, a private member of the House of Commons introduced a bill to provide for the annual enumeration of the people and of persons in receipt of parochial relief. Despite official support, the bill was violently opposed and it was denounced as *"sacrilegious"*, *"likely to result in some public misfortune or epidemical distemper"* and a *"project totally subversive of the last remains of English liberty (and) calculated to reveal our weakness to our enemies"*. The bill was passed in the House of Commons, but was thrown out of the House of Lords.

However, by the end of the century, general opinion had changed to the extent that it was thought desirable to know the relations between an increasing population and the means of subsistence. A census bill was again introduced by a private member, and this bill was passed without opposition at the end of 1800.

The United Kingdom of Great Britain and Ireland was created by Act of Parliament in 1801 and the first census of Great Britain was conducted in 1801, but it did not include Ireland. France took censuses in 1800 and 1806, but the administrative machinery was poor, and it was another 30 years before the enumerations could be accepted as valid.

Censuses of England, Scotland and Wales were conducted every 10 years, but the first attempt at a general census of Ireland was not made until 1811. However, because of the antagonism of the Irish Catholics towards the British, it was a disaster, and the successive census in 1821 only achieved a bare enumeration, which is not believed to be accurate. At the time of the creation of the United Kingdom, Catholic bishops and dignitaries were banished from Ireland, and Catholics were forced to contribute towards the support of the Anglican Church. Despite being the majority of the Irish population, Irish Catholics had no vote, could not bear arms, could not seek higher education, practice law, buy land, or hold office. Rent was paid to absentee landlords in England, whose agents had absolute power over their tenants. Voting rights were not given to Irish Catholics until 1829.

The 1831 Irish Census results were believed to be subject to overenumeration, as enumerators were paid according to the numbers they returned. The results were corrected in 1934, and made the basis of the new system of national education. The 1841 and 1851 Censuses were more successful, probably because police constables were employed as enumerators. The latter two censuses were notable for the valuable statistics collected on the rural economy of Ireland. The schedules for

the Irish censuses were completed by enumerators, whereas those for the English, Welsh and Scottish censuses were completed by the householders.

The English and Scottish censuses did not secure age data until 1841, and no information on marital status was obtained until 1851. A uniform system of registration of births, deaths and marriages came into operation in England and Wales in 1837, and this enabled the accuracy of returns to be checked; it also provided the appropriate machinery for census taking. Parish schoolmasters were employed as enumerators in the country districts of Scotland.

NEW ZEALAND HISTORY OF CENSUS TAKING FROM 1840 ONWARDS

Early Population Estimates

New Zealand was proclaimed a crown colony of Britain in 1840. In the few years prior to this, some statistics had been collected and evaluated. Reports from Select Committees on New Zealand, in the British Parliamentary Papers, 1837-40, contain several estimates of the European and Maori populations made by missionaries, traders and officers of passing ships. At that time, there were many Maoris in the north of the North Island and hence the bulk of the non-Maori settlement, which chiefly consisted of traders and missionaries, was localised in that area. These early estimates only related to the populations in that area. There were also pockets of non-Maori settlements in the south of the South Island, where industries such as sealing were practised, but there are no records of any estimates of the Maori population in that area. It is probably true to say that the sealers were not concerned about the welfare of the local Maori population, and saw no point in spending time on estimating the size of the native population.

Appendices 1.1 and 1.2 contain extracts taken from the Select Committee reports. Appendix 1.1 illustrates how crude these early estimates of the size of the Maori and non-Maori populations, and the bareness of other information gleaned about the Maori population, were. This information, though sparse, does yield a picture of the geographical distributions of the two populations, although it must be kept in mind that several of the testimonies in the reports were based on hearsay alone. Appendix 1.2 focuses on the character of the non-Maori persons in New Zealand, as attested to by the witnesses, and these clearly give the impression that the non-Maoris living in New Zealand at that time fell into two categories; those who were in New Zealand to attend to the spiritual well-being of the Maori population, and those who were there for financial or other form of gain, which included evading or escaping from authority.

First Population Censuses (Non-Maori)

Along with the status of the colony went the usual policy of the Colonial Office of carrying out a population census. Schedules were sent to Governor Hobson in 1840, who forwarded them to the resident police magistrate of each settlement or town. The Colonial Secretary was in charge of organising the collection of the information, and forms were sent to the police magistrates of each town or settlement for completion. The system was put into operation in 1842. In 1840 and 1841, population numbers were based on official estimates.

Between 1841 and 1851, resident magistrates regularly took official population counts in the settlements of the new colony. As for all British colonies, the data obtained from the census was carefully written up in the Blue Books, so called because of the colour of their covers. The information collected was supplied to the Secretary of State for War and Colonies, and included the following particulars:

Description of the county, district or parish
 Area in square miles
 Number of "Whites" and "Coloured" (excluding Maoris) by sex
 Number of "Aliens and Resident Strangers"
 Population to the square mile
 Occupation status of the population
 Number of births, deaths and marriages in that year.

The original Colonial Office scheme which commenced in New Zealand in 1842 included the collection of statistics on religious professions. In the main settlements, particulars of religious affiliations were noted when the census was taken by the police magistrates. Clergymen were also required to make annual returns, but these returns were incomplete. In general, the geographic boundaries were as for the population census, and religious affiliations of the military and their families were not included. The religions of minors were assumed to be the same as those of their parents or guardians.

However, these enumerations included only the non-Maori population, and even then only the population living within the settlements. Even for such a simple and straightforward census, the time, effort and money it consumed was quite considerable. As the early censuses provided no financial gains in the form of taxes for either the local Government or the English Government, they must have been taken in an effort to obtain knowledge of the colony for administrative purposes.

In comparison with present day methods, this first census was very simple, cheap, and somewhat arbitrary. Who carried out the actual enumeration? We must assume that this was one additional task added to the busy life of the local policemen. Information would have been tallied by first hand observation, by hearsay, or by any other method at his disposal. Generally, the information on each family would have been supplied by the head of the household, and particulars such as the residential address of each member of the family would have been supplied,

rather than the actual location of each person at the time of the enumeration. The result was a **census de jure**. It was somewhat rough and ready when compared with modern methods, particularly as the task of enumeration would have had to be fitted in as other duties permitted, and hence the data for each town or district was undoubtedly collected over a long period of time, and probably with varying degrees of enthusiasm. The current practice is to employ staff for the specific purpose of enumeration, and to conduct a simultaneous census throughout the country.

The households were enumerated street by street, as were the occupants of the gaol, the military and those residing in surrounding settlements. Occasionally, a return of residents engaged in shipping was furnished by the Collector of Customs. It was general practice not to include the military and their families in official Blue Book returns.

According to Simkin (1954), checks of the official records indicated a high level of accuracy for the settlements covered. This is quite remarkable, since the accuracy of the returns was entirely dependent on the attitude and ability of the police magistrates. Conditions in the Bay of Islands and Hokianga were unsettled in those early years following the transfer of the capital to Auckland; the outbreak of Heke's War forced the abandonment of the census in the north for 1845 and 1846.

The Blue Books were not designed for general circulation. From 1841-1847, the New Zealand Government Gazette provided a source of official statistics, but these were limited to particular parts of the Colony, or to particular periods or occasions. At that stage, New Zealand was separated into two provinces: New Ulster, which was that part of the North Island lying north of a line running east from the mouth of the Patea River; the remainder of New Zealand constituted New Munster (New Zealand Census of Population and Dwellings 1971 - The New Zealand People, 1973). In 1848, the New Ulster Government Gazette and the New Munster Government Gazette

replaced the single official publication. After 1847, the Blue Books were also produced separately for the two provinces of New Ulster and New Munster. Statistics of New Munster were printed in 1849 by order of the Legislative Council.

The Imperial Act of 1853 granted representative government to the expanding colony, and replaced the existing two provinces with six new provinces: Auckland, New Plymouth, Wellington, Nelson, Canterbury and Otago. Statistics of Nelson from 1843 to 1854, inclusive, were published by the Provincial Government in 1855, followed by a similar compilation for 1855, which was published in 1856. Statistics of New Plymouth, from 1853 to 1856, were published by the Provincial Government, and the census returns and various occasional publications in the Gazettes provided differing amounts of information on the provinces.

One of the actual census books used in the preparation of the returns has been traced. The Auckland Police Census Book is now lodged in the Auckland Public Library, and contains complete manuscripts for the Auckland province from 1842 to 1846. The information collected was more detailed than that required by the census form, and included the age distribution, religion, and number and type of houses occupied. This additional information was also collected in other districts, so was probably required by the Colonial Office, but was not included in the Blue Book returns, nor, apparently, was it regularly included in the Governor's despatches.

Other means of checking population movements were the regular returns and special reports often furnished by members of the three missionary societies. Also, when government officials made occasional journeys "to the interior" or along the coast, they were instructed to report on Pakeha, that is non-Maori, and Maori populations. A number of reports from the New Zealand Company's agents and correspondence to the New Zealand Journal were also used to check official population statistics. In most cases, the statistics collected by the several sources

agree, and where there are discrepancies, these are mainly a result of using different boundaries.

The most unsatisfactory official returns are those for "aliens and resident strangers". A lack of definition of these terms caused them on different occasions to be included with the British population or listed separately. Sometimes the military were included, and sometimes the figure quoted was merely an estimate. However, these criticisms apply more particularly to the earlier annual returns, as naturalisation later led to absorption of this category into the British population.

Possible sources for determining the populations of the more remote coastal and inland settlements which were not included in the official returns are old land claim files and other official papers, missionary records and private documents.

In the settlements of Auckland, New Plymouth, Wellington and Nelson, the usual practice was to enumerate and classify buildings when taking the annual census for the period 1840-1852. Although there was no Blue Book return for buildings, the Colonial Office probably required the collection of the information.

In some business areas, it was common practice to reside in rooms which formed part of shop premises. Hence some buildings were designated as houses, when they should really have been designated as commercial buildings.

These official building statistics do not include flour and flax mills, small factory buildings, public buildings such as churches and halls, military barracks, hospitals, courthouses and gaols. Statistics relating to the New Zealand Company settlements give a more accurate picture of the total number of buildings, and sometimes include specification of the material of the houses and buildings.

Quality of Early Census Data

How were the enumerations received by the settlers, and other Europeans? They were conceived and carried out by those with authority whose duties included maintaining law and order. Consequently, those persons fearing or distrusting the local authority would undoubtedly have avoided enumeration whenever possible, and as the enumeration was taken by the police, it is highly unlikely that a good coverage was obtained. Furthermore, the data collected would have been susceptible to a number of additional errors and biases. The census dates were not always uniform for the whole of New Zealand. Until 1851, the usual practice was to take the census in the last week of December or the first week in January (at the discretion of the local magistrate), but the period was occasionally extended from August to February. Various methods of enumeration were employed, and there was also variation in the scope of questions asked. Delay in forwarding returns occasionally caused their loss. The 1842 return from Nelson was never received, as the local police magistrate failed to forward the return at the proper time and was killed in the Wairau Massacre of June 1843.

Because the census boundaries were only defined for the main settlements, and non-standardised schedules were used, the early censuses did not provide a satisfactory basis for computing statistics for the whole country. Both details and whole categories of information were sometimes missing. However, although these early enumerations were incomplete as far as the total population of New Zealand was concerned, there is sufficient evidence to prove that early enumerations were entitled to rank as censuses. The isolation of towns and settlements and the difficulties of transport made collection of data a lengthy process, but the relative smallness of the population reduced the margin of error.

Development of Simultaneous Standard Census

By 1851, immigration had caused rapid growth of the colony, and it was clear that a simultaneous, uniform census throughout the country was needed. The Legislative Assembly passed a census ordinance in 1851, providing for a general census to be taken that year and "in every first, fourth and seventh year in every decade of years". The first national census was taken in 1851, and comprehensive enumeration of the non-Maori population was attempted, although the census was not taken simultaneously throughout the country. The actual enumeration was conducted by the provincial governments of New Ulster and New Munster. However, no second enumeration was ever taken under the ordinance. This was because the number of provinces, at different periods prior to 1853, varied from 6 to 10. In 1853, 6 new provincial governments were formed, each with its own Legislative Council, to be individually responsible for census enumeration. As mentioned above, these provinces were Auckland, New Plymouth, Wellington, Nelson, Canterbury and Otago. Each province (with the possible exception of Otago) passed an individual census ordinance in 1854 or 1855 and conducted its own census. A standard, based on the English model, was used to obtain information about new settlers, locations, names, ages, sex, infirmities, industries, fenced land and livestock. However, the obligation was not fulfilled, and the censuses of 1854 and 1857 were incomplete.

"Statistics of New Zealand, 1853, 1854, 1855 and 1856" was the first attempt to present one comprehensive and authorised compilation of the general statistics of the entire colony. However, in the introductory memorandum, the Registrar-General reported that the tables for the whole colony could not be even approximately completed, due to tardy, omitted or non-uniform returns. Certain returns were lost in the fire which destroyed the Wellington public offices, and of those returns received, the censuses were taken in varying months of the year for different provinces, and even in different months on successive occasions in the same province. *"A want of*

uniformity in the Schedules, not merely as to details, but as to important branches of information" was also reported. The Registrar-General also reported that information was *"taken at different times within the last two years in the several Provinces"* for the 1857 Census.

The Census Act of 1858 repealed the ordinance and instituted a national, integrated census to be taken at regular 3-yearly intervals, beginning in 1858. The Act also provided for the employment of census enumerators as official census collectors. Hence, by this stage, the enumerations were beginning to resemble the modern censuses, as they were now being taken on a national basis, at regular time intervals, and official enumerators were employed solely for the purposes of the census, rather than imposing additional duties on to the resident magistrates. The Registrar-General was able to report that the numbers given by the enumerators were *"generally correct in the Totals, and, indeed, in all that could be regarded as practically important"*, although the numbers *"were found on more minute analysis to contain minor discrepancies"*.

The Act of 1858 was amended in 1860, 1867, 1870, 1873 and 1876, and finally replaced by the Census Act of 1877. Prior to 1877, each province compiled its own census statistics and then forwarded them on to the Registrar-General. The 1877 Act repealed earlier legislation and provided for a census in every fifth year following the 1881 Census. The Registrar-General became responsible for the entire census operation and the census processing was centralised in Wellington, providing an opportunity for uniform interpretation and presentation of data. The quinquennial census cycle has been maintained since 1881 with only two interruptions; namely the abandonment of the 1931 Census, forced by the economic recession, and the postponement of the 1941 Census until 1945 and the subsequent cancellation of the 1946 Census, because of the outbreak of World War Two.

Unfortunately, the decision to abandon the 1931 Census has prevented a record of the social and economic status of the population in the depths of the worst economic depression up until that date.

Further amendments to the 1877 Act followed in 1880 and 1890, and an act of 1910 created a separate Census and Statistics Office, under the responsibility of a Government statistician. During the 1911 Census, a sub-enumerator was drowned while crossing a swollen river on horseback. In 1916, the Post Office agreed to cooperate with the enumeration of the census. The enumeration districts were redefined to facilitate the new enumeration procedure, and the Postmaster of a town centrally located in each district was appointed enumerator. Each enumerator was responsible for the appointment of sub-enumerators and the collection routine for their own district, allowing local knowledge to be used to full advantage.

Subsequent Statistics Acts were passed in 1926 and 1955, and in 1955 the Census and Statistics Office was extended to a separate department of state: the Department of Statistics. The current legislative authority for the census is the Statistics Act of 1975, in conjunction with the Amendment Acts of 1978, 1982, 1985 and 1986.

The Post Office continued to provide the staff and facilities for organising and controlling the census field work until prior to the 1986 Census, when a decision by Post Office Headquarters that the census duties would be conducted out of office hours, and at overtime rates persuaded the Department of Statistics to conduct all facets of the census operation itself.

Listed in Appendix 1.4 are the dates of New Zealand censuses from 1851 to 1986.

Current Legal Requirements of Census

The 1975 Statistics Act requires that questions on 9 subjects be included in all national censuses. The Act also mentions 25 topics that are considered to be of national value. Because of the importance of these topics, they are normally included in all censuses as a matter of course, and are referred to as standard questions. These two groups of subjects, namely compulsory and standard, form the basis of the New Zealand Census. Extracts from the 1975 Statistics Act are given in Appendix 1.3, and include a complete listing of compulsory and standard groups of subjects. The Act also provides for additional, unspecified questions to be asked where these would meet a specific need for information.

MAORI CENSUSES

Early Estimates

From 1769 to about 1830 very few estimates of the Maori population were made, and the correct sources of those estimates which survived is unclear. 'Counts' were made of some small areas, but these often were really estimates, ranging from those based on detailed personal knowledge of a district to those based on hearsay. In a few areas, some officials and missionaries took actual headcounts and attempted to distinguish between adults and children, and to tabulate tribes. Estimates are attributed to Cook (although some argue that the estimate was Forster's) and Nicholas.

Cook's estimate was based on settlements visited or coastal villages observed from shipboard. According to Lewthwaite (1950), Cook believed that the interior and the west coast of the North Island from Cape Maria van Diemen in the far north to Taranaki were uninhabited. Lewthwaite produced archaeological and other evidence which indicates that there

were in fact relatively dense settlements in parts of the interior. Nicholas's estimate was based on a brief visit, mainly to the Bay of Islands, in late 1814 to early 1815.

From approximately 1830-1840, non-Maori settlement was concentrated in the north of the North Island around the Bay of Islands, and in the south of the South Island. Missionaries, traders and visiting ships' officers estimated the size of the Maori population in the north. However, in the south, non-Maoris were engaged chiefly in industries such as sealing, and were not interested in enumerating the few Maoris in the area. Estimates for this period are attributed to Yate, Hinds, Bannister, Baring, Coates, Williams, Terry, Fox, New Zealand Company Report, Polack, Crawford, and Wilkes. Appendix 1.1 contains some of estimates of the European and Maori populations as supplied by Nicholas, Flatt, Watkins, Montefiore, Wilkinson, Baring, Coates and Beecham to the Select Committees on New Zealand (British Parliamentary Papers, 1837-40).

Both Yate and Williams were members of the Church Missionary Society. Williams had travelled widely and had made regional estimates of the populations around mission stations. Coates was Secretary to the Church Missionary Society, and his evidence consisted of a letter quoted from the Reverend Williams. Similarly, Hinds quoted missionary records and Bannister quoted a Reverend W. Gate (presumably Reverend Yate). Terry visited New Zealand for approximately a year, whereas Nicholas had spent 10 weeks in the country. Both men had published an account of the country. Fox merely quoted missionaries. Polack was a trader who had spent six years in New Zealand, and his estimate would seem to be the most reliable, but it must be remembered that it was still merely an estimate of the population. Crawford had been in New Zealand for a year or more and Hamlin's estimate was apparently from a combination of missionary records and personal experience. Wilks had only visited the country briefly, and it is likely that his estimate was based on hearsay. Flatt was a missionary

who spent two and a half years in New Zealand and Watkins, a private surgeon, had spent three months in the country botanising. Montefiore had chartered a ship for a pleasure tour, and had only occasionally gone ashore. Most of his evidence consisted of hearsay. The Reverend Wilkinson was an Anglican clergyman who had spent 4 months in New Zealand. Baring, an M.P., quoted correspondence as did Beecham, who was secretary to the Wesleyan Missionary Society.

From 1840 to 1857-8, further small-scale detailed estimates of small areas were made, as well as a number of estimates of the total Maori population. In contrast to earlier estimates, these were often based on widespread travel, and the more detailed estimates gave an idea of the geographical distribution of the Maori population. Estimates by Dieffenbach, Swainson, Shortland, Clarke, and Halswell indicate that Northland, Waikato-King Country, the Bay of Plenty and the East Coast had large populations, while the Firth of Thames and the southern regions had smaller numbers. Later estimates by Taylor, McLean and Fenton suggest a decline in the population. Estimates of the Maori population are also attributed to Grey, Fox and Thomson, while Fox's estimate was based on his analyses of various estimates of the period, and Thomson claimed access to official, but unspecified, sources.

The First "Census"

The first census-type enumeration of Maoris, attributed to Fenton, covered the whole of New Zealand, excluding Nelson. The figures for Nelson were derived from a provincial census of 1855. Fenton's Census took place over twelve months in 1857-8 and as well as enumerating the Maoris, it also tabulated 'adults' and 'minors' for some regions. However, suspicion and hostility on the part of the Maoris caused unsystematic enumeration or mere estimates in many areas. Fenton personally conducted the enumeration of the Waikato, a region on the verge of war, as he was well known to the Maoris there. In other

areas, under-enumeration occurred even when the census takers were systematic and thorough.

From 1860 onwards, warfare between Maori and Pakeha prevented any census being taken of the Maori population for at least 10 years, and an estimate was made for the North Island in 1867. In 1868, a census was made of the South Island Maoris, consisting of enumerations made in some South Island districts.

Establishment of Regular Enumerations

After commencement of regular census-taking in 1874, enumerations were taken in the same years as non-Maori censuses on every occasion, although the information collected was less comprehensive than that for the rest of the population. Considerable difficulties were experienced, due to the nomadic habits of some tribal groups and the constraints of language and literacy. Antagonism towards the Pakeha must have been another dominant factor. Comparisons of the 1874, 1878, 1881 Maori censuses with data from other sources indicates that underenumeration occurred, and enumerators involved in the 1891 Census reported fairly severe underenumeration in certain regions.

After the 1874 Maori Census, special books were supplied to the Native Departments in each district, and data was collected on numbers, sex, ages (in very broad categories) and tribes. The Maori censuses were conducted over varying periods of time, as it was considered impractical to attempt the enumerations on one particular night. From the 1886 Maori Census onwards, the classifications were by narrower age-groups and by sex for the total population, for regions and, until 1901, for tribes. The schedules were completed by officials who were usually district officers of the Native Department. For these censuses, Maoris who were not of full Maori blood were arbitrarily allocated to the categories 'Half-castes living as Maoris'

(included in the Maori census) and 'Half-castes living as Europeans' (excluded from the census), depending on the whim of each enumerator. We thus have an incomplete picture of the Maori population at that time, making it difficult to compare these earlier censuses with more recent ones.

The 1901 census enumerators reported that the enumerations were the most thorough up until that time, but the census still consisted of a mere headcount. The 1906 Census, conducted under the supervision of the Justice Department, used a rough classification of the Maori population in terms of age and mode of living. The two age groups were 'Under 15 years of age', and '15 years of age and over'. Maoris still living as members of tribes were enumerated separately from those living in "European" communities.

Gradual Integration of Maori and Non-Maori Censuses

In 1916, the first attempt was made to integrate the Maori and non-Maori enumerations, but the experiment was confined to the South Island. The same schedules and subenumerators as for the non-Maori census were used, and for the first time, household heads were responsible for the enumeration. For the 1916 Census, many enumerators reported experiencing difficulty in obtaining information because the Maori feared that the statistics would be used for military recruitment purposes. The dual system of integrated enumeration for the South Island, and the usage of special books, which were completed by enumerators, for the North Island was repeated for the 1921 Census.

The 1926 Maori Census marks the first enumeration of the Maori population on a specific night, and the first count of the Maori populations of towns. A special Maori schedule was introduced for the North Island and the Chatham Islands, and all questions and guide notes were given in both English and Maori. The schedule was more detailed than previous schedules, although it

was still not as comprehensive as the standard European schedule, which was supplied to the South Island Maoris, and, when requested, to North Island Maoris. The standard European schedules were supplied to Maoris living in the South Island and in Stewart Island because they were so few in number. In contrast to earlier Maori censuses, throughout the whole country household heads were now responsible for completing the schedules.

One side of the Maori questionnaire collected the following personal data: name, sex, race, marriage, trade or occupation, religion, and usual residence. The standard European questionnaire contained the same questions, as well as questions on the relationship to the head of the household, orphanhood, industry, grade of occupation (employment status), length of residence, dependents and income. The differentiation between the two types of 'half-caste' was abandoned; that is, 'living as Europeans' versus 'living as Maoris'.

The 1926 Census marked the first time that detailed information was collected on the dwelling characteristics and conditions of Maoris. The dwelling schedule was printed on the reverse side of the Maori questionnaire. Questions common to both dwelling schedules were the nature of the dwelling, the number of occupants, the number of rooms, and the tenure. The standard European dwelling schedule also contained questions relating to the materials of outer walls, rent, whether the dwelling was permanent or temporary, flats, habitual residents, location (which was measured by the distance to the nearest Post Office), and the stock of poultry.

The 1926 Census marks the beginning of modern, comprehensive and completely integrated census-taking in New Zealand, and the procedure was repeated for the 1936 and 1945 censuses. From 1951 onwards, the enumeration procedures were identical for the Maori and non-Maori sectors of the population, and published census tabulations of the New Zealand population

included data on the Maoris. In 1951, a small number of schedules were printed in Maori, and were to be issued on request to Maoris in the North Island. There is no record of any of these schedules having been used.

Minor illogicalities regarding persons defined as 'part Maori' and 'part other non-European blood' were gradually but not entirely eliminated. The change in definition between the 1921 and 1926 censuses created the difficulty of comparing earlier censuses with recent censuses, as did further changes in racial classification after the 1951, 1976 and 1981 censuses.